REMARKS

Claims 1-24 are pending in the present application. In the Office Action mailed July 24, 2007, the Examiner provisionally rejected claims 1-24 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 22-25, 27-35, 37-40, 44, 45, 48-50, and 54 of copending Application No. 10/708,657 in view of McCormick (USP 6,026,682). The Examiner next rejected claims 1-11 and 18-23 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 1-24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Prunier (FR 2 536 320) in view of McCormick. Claims 1-24 are rejected under 35 U.S.C. §103(a) as being unpatentable over Behnke et al. (USP 2,510,207) in view of McCormick.

Provisional Double Patenting Rejection

With respect to the provisional rejection of claims 1-24 under the doctrine of obviousness-type double patenting as being unpatentable over claims 22-25, 27-35, 37-40, 44, 45, 48-50, and 54 of co-pending Application No. 10/708,657 in view of McCormick, Applicant notes that the provisional obviousness-type double patenting rejection is not the only remaining rejection in either the present application or Application No. 10/708,657. The Examiner has applied rejections under §103(a) for the present application in the current Office Action, and for Application No. 10/708,657 in the Office Action of July 24, 2007. Pursuant to MPEP §§ 1490(V)(D) and 804(I)(B)(1), Applicant therefore takes no present action with respect to this provisional rejection.

Rejection under 35 U.S.C. §112, Second Paragraph

The Examiner rejected claims 1-11 and 18-23 under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In making the rejection, the Examiner cited MPEP §2173.05(d), and stated that "the phrase 'or the like' (in this instance, the term 'type') renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed..., thereby rendering the scope of the claim(s) unascertainable." *Office Action*, July 24, 2007, p. 5 (emphasis in original). The Examiner further cited to MPEP 2173.05(b), which states that "[t]he addition of the word 'type' to an otherwise definite expression... extends the scope of the expression so as to

render it indefinite." *Id.* Applicant respectfully disagrees with the Examiner's conclusion that the aforementioned claims are indefinite because of the inclusion of the term "welding-type."

Firstly, it is noted that welding-type is not the same as "or the like", as asserted by the Examiner, in that welding-type does not present an alternative as in using the word "or."

Secondly, while MPEP 2173.05(b) may state that the addition of "type" to an otherwise definite expression may render it indefinite, MPEP 2173.05(b) also states that "[t]he fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. 112, second paragraph" (citing *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984)). Furthermore, MPEP 2173.02 states that "[o]ffice policy is not to employ *per se* rules to make technical rejections" and that "[t]he test for definiteness under 35 U.S.C. 112, second paragraph, is whether 'those skilled in the art would understand what is claimed when the claim is read in light of the specification.'" *See also Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). Applying this test to the current claims, it is clear that the term "welding-type" is in fact definite. That is, one skilled in the art would understand what is called for in claims 1-11 and 18-23 when the claims are read in light of the specification. The Application specifically sets forth that a "welding-type" system, power, or enclosure encompasses welding, cutting, and heating systems/components, and that the term "welding-type" is equivalently applicable with many high power systems/components, such as cutting and induction heating systems/components. *Application*, ¶42. As such, one skilled in the art would understand what is claimed when the claim is read in light of the specification. In light of the foregoing, Applicant respectfully believes that claims 1-11 and 18-23 are definite, and as such, are in condition for allowance.

Rejection under 35 U.S.C. §103(a)

In rejecting independent claims 1, 12, 18, and 23, the Examiner stated that a combination of either Prunier et al. or Behnke et al. with McCormick renders the claims obvious. Both Prunier and Behnke et al. fail to teach or disclose a cooling system as called for in claims 1, 12, 18 and 23. Prunier fails to teach or disclose any mechanism or control for controlling coolant flow in the system. Behnke et al. discloses a system in which a control box B contains a series of relays 10, 12, 17, a timer 14, and switches 18, 20 that control the flow of argon gas and coolant in the

welding torch. See *Behnke et al.*, Col. 1, lns. 52-55 and Col. 2, lns. 1-17. The relays respond to increases/decreases in arc voltage to determine when the timer and switches should be activated in order to control flow of the gas and coolant. *Id.* Behnke et al., however, does not disclose a cooling system adapted to maintain coolant circulation based on whether a temperature of the coolant exceeds a set point temperature.

The Examiner thus conceded that Prunier et al. and Behnke et al. do not disclose "a means to maintain coolant circulation until expiration of a specific time period and/or until a temperature falls below a certain value," but asserted that McCormick teaches a coolant safety system for achieving such subject matter. *Office Action,* supra at 7. For the motivation to combine these references, the Examiner stated that it would have been obvious to do so "in order to automatically shut down (deactivate) the flow of coolant in the event of a fault." *Id.* at 9. Applicant respectfully disagrees and believes that the rejection is unsustainable because McCormick does not teach or suggest the subject matter lacking in both Prunier et al. and Behnke et al.

McCormick teaches a coolant system safety device 10 for an automated welding machine. Safety system 10 includes a microprocessor 104, 244 configured to monitor pressure flow sensors 100, 102 that measure coolant flow rate to and from a welding component in a coolant supply tube 30 and coolant return tube 36. *McCormick*, Col. 2, ln. 43 to Col. 3, ln. 5. The flow of coolant to the welding component is monitored, and if the flow is outside a set threshold value (i.e., max/min flow rate, difference in supply/return flow readings), a solenoid valve 40 is actuated to shut-off flow of the coolant to the welding component. *McCormick*, Col. 3, lns. 5-11. In one embodiment, safety device 10 further includes a relay 290 for leak detection within the coolant flow tubes 30, 36 as well as a temperature sensor IC 334. *McCormick*, Col. 9, lns. 13-17, 38-42. Temperature sensor 334 measures a temperature of the coolant and is connected to the microprocessor 104, 224 to transfer the temperature data thereto. The microprocessor has trip points programmed therein that, when crossed, stops a welding operation (i.e., deactivates a welding component). *McCormick*, Col. 9, lns. 44-50. That is, when the temperature of the coolant as measured by temperature sensor 334 is too high/low and crosses a preset trip point, a welding operation is terminated and coolant flow shut-off. *Id.*

McCormick, however, does not teach or suggest that which is called for in claim 1, which calls for the circulation of a coolant through a welding torch to be maintained after deactivation of the welding-type component if a measured coolant temperature exceeds a threshold. As detailed in the current application, the cooling system 44 in welding-type system 10 is configured to adaptively control circulation of coolant to and from torch 32. *Application*, ¶23. The cooling system 44 is configured to maintain coolant circulation upon deactivation of the torch 32 if a measured coolant temperature exceeds a threshold. *Application*, ¶24. The cooling system 44 includes a coolant tank 46 and pump assembly 48 designed to pump fluid from the tank to the torch 32 in response to control signals from a controller 50. *Application*, ¶23. The controller 50 includes a temperature sensor 54 that provides feedback as to the temperature of the torch and/or the coolant within the torch. In this regard, controller 50 can turn on or off pump 48 to control the flow of coolant to and from the torch based on feedback from temperature sensor 54 such that circulation is maintained after a welding process is complete if the temperature exceeds a specified set point. *Application*, ¶24. Thus, the cooling system called for in claim 1 is configured to maintain coolant circulation upon deactivation of a welding-type component if a measured coolant temperature exceeds a threshold.

As discussed above, the system of McCormick has no mechanism or mode by which a temperature controller determines whether to maintain coolant circulation or to cease coolant circulation after deactivation of the torch, as is called for in claim 1. Rather, the temperature sensor 334 and microprocessor 104 setup of McCormick merely teaches temperature sensing in order to terminate a welding operation by deactivating the welding component. *See McCormick*, Col. 9, lns. 38-54. As set forth in claim 1, a controller is configured to maintain circulation of a coolant through a welding torch after deactivation of the welding-type component if a measured coolant temperature exceeds a threshold. The maintaining or termination of the coolant by the controller in the present invention is not in response to any sensed deactivation of a welding component or in conjunction with termination of a welding operation, as the Examiner has identified as being the teaching of McCormick, but instead is controlled to allow for adequate cooling of the torch after deactivation thereof. Such a controller is clearly not taught or suggested in McCormick. As the art of record clearly does not teach or suggest all the elements of claim 1, Applicant respectfully requests that the rejection of claim 1 and all claims depending therefrom be withdrawn.

Claim 12 calls for, in part, a controller configured to "monitor a temperature of the coolant after deactivation of the welding torch" and to "continue coolant circulation until a temperature of the coolant falls below a predetermined value." (Emphasis added). As set forth above, McCormick does not teach or suggest a controller and/or temperature sensor for monitoring a temperature of the coolant after deactivation of the welding torch. Rather, the system of McCormick uses a microprocessor and temperature sensor for the purpose of deactivating a welding device based on a measured coolant temperature being above or below a trip point. This is not what is called for in claim 12. The present invention provides a system for providing adequate cooling to a torch during operation and after deactivation whereas the system of McCormick merely detects a fault via a pressure sensor and/or temperature sensor for purposes of deactivating the system. As such, Applicant requests withdrawal of the rejection of claim 12 and all claims depending therefrom.

Claim 18 calls for monitoring coolant temperature upon deactivation and for maintaining coolant circulation through the welding-type component if the coolant temperature exceeds a threshold. As shown with respect to claims 1 and 12, McCormick does not teach or suggest such a limitation. Rather, the system of McCormick uses a microprocessor and temperature sensor to monitor coolant temperature for purposes of actually deactivating a welding component if the measured coolant temperature is above/below a trip point. Thus, claim 18 is patentably distinct over the art of record. Applicant accordingly requests withdrawal of the rejection of claim 18 and all claims depending therefrom.

Claim 23 calls for "means for detecting activation of the means for the outputting welding-type power" and "means for maintaining coolant circulation until coolant temperature falls below a certain set point." (Emphasis added). In the present Office Action, the Examiner has failed to address the "means for detecting activation of the means for the outputting welding-type power" and has given no indication of where such an element is taught or suggested in the cited references. Additionally, as Applicant has shown above, McCormick does not teach or suggest a means for maintaining coolant circulation until coolant temperature falls below a certain set point after deactivation of a welding torch is detected. Accordingly, claim 23 is patentably distinct over the art of record, and Applicant requests withdrawal of the rejection thereof.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-24.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

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Dated: October 24, 2007
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General Authorization and Extension of Time

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-2623. Should no proper payment be enclosed herewith, as by credit card authorization being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-2623. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extensions under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-2623. Please consider this a general authorization to charge any fee that is due in this case, if not otherwise timely paid, to Deposit Account No. 50-2623.

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